



TX51-19MD

LCRTF



LIGHT **C**APABILITY **R**OUGH **T**ERRAIN **F**ORKLIFT

OVERVIEW

- Safety and Operator Responsibilities
- Characteristics and Major Components
- Instruments and Controls
- Basic Operations





Terminal Learning Objectives and Enabling Learning Objectives

METHOD AND MEDIA

- Lecture, demonstration and practical application.
- Computer Generated Graphics
- Student Outline
- Tractors and Training Loads
- IRF's

EVALUATION



- **Multiple choice**



- **Practical Application**

SAFETY

- Every Marine is responsible for safety
- Cease Training procedures
- All Personnel must maintain constant situational awareness:
 - Other personnel
 - Obstacles
 - Other vehicles
 - Weather
- ORM

QUESTIONS



SAFETY AND OPERATOR RESPONSIBILITY

SAFETY

- “Slow is smooth, Smooth is fast”
- Work habits
- Hazardous conditions
- Know the controls
- Safety rules governing



SAFETY AND OPERATOR RESPONSIBILITY

OPERATOR RESPONSIBILITY

- Seat belt
- Neutral/Parking brake
- NO PASSENGERS
- Pinch points
- Clearances
- Pedestrians



QUESTIONS



CHARACTERISTICS

- Make and Model
 - Manufactured by Terex Lift Company
- Model Designator: TX 51-19MD
- Commonly Referred to as:
 - 5K – approximate maximum lifting capacity
 - Terex – Company name
 - LCRTF –Nomenclature



Mission:

To LOAD and UNLOAD palletized cargo from



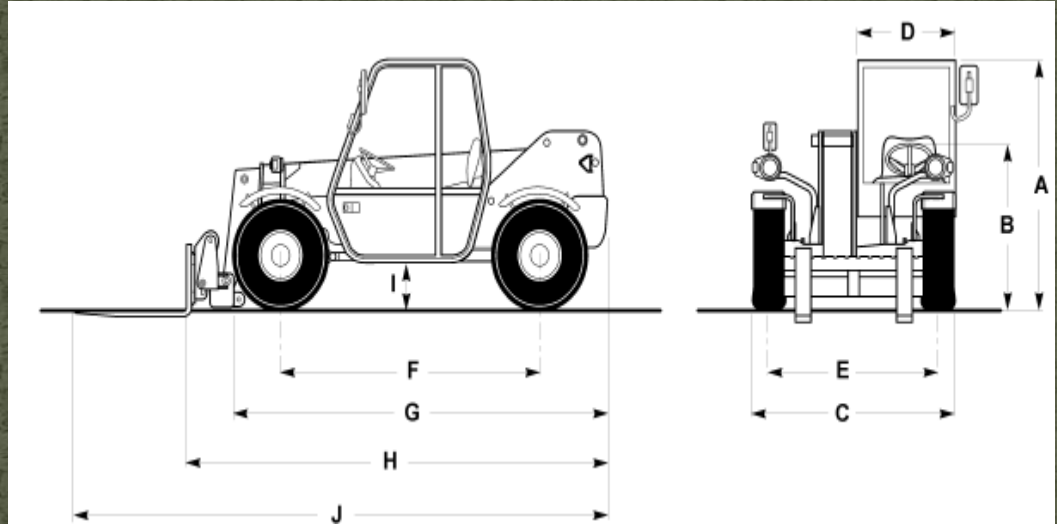
SPECIFICATIONS

- Dimensions

- Height -7'6"

- Width -6'6"

- Length -14'8"



- Needed for Embarkation

- Weight in running order – 13,450 lbs.

- Weight in operational order – 13,980 lbs.

SPECIFICATIONS

- Reach:
 - Maximum Lifting Height – 18
 - Maximum Forward Reach – 1
- Lifting Capacity:
 - Max. Lifting Capacity – 5,070
 - Load Chart



SPECIFICATIONS

- Speed:
 - Max. 20 mph
- Turning Radius
 - 26' 8"
- Fording Depth
 - Max. 36"
- Slopes:
 - 45 degree slope



MAJOR COMPONENTS

- Engine:

- Deutz BFM 2011

- In-line 4 cyl., 4 stroke,
direct injection, diesel

- 81.6 hp @ 2500 rpm

- Oil Cooling System

- Crank case oil, oil cooling radiator



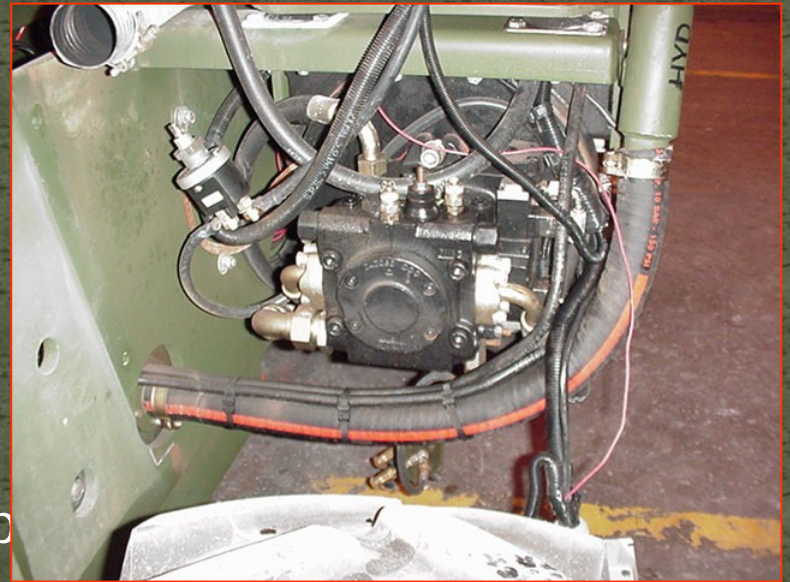
MAJOR COMPONENTS

- Electrical System:
 - Batteries
 - 2/12 v. batteries
 - 24 v. neg. ground
 - Solargizer
 - Small solar panel
 - Maintains charge
 - NATO Slave Connection
 - NATO to NATO equipment jump start
 - Slave cables
 - Battery Disconnect
 - Disconnects batteries



MAJOR COMPONENTS

- Hydraulic Pump:
 - Variable displacement pump drives:
 - Hydraulic motor
 - Hydraulic circuit
- Hydraulic Circuit:
 - Dispenses oil to the distrib



MAJOR COMPONENTS

- Transmission:
 - Hydraulic Motor
 - Max. Torque/heavy loads, Max. Flow/light loads
- Steering Axles
 - Front axle – limited slip
 - Rear axle – locked differential
 - Full time 4 – wheel drive



MAJOR COMPONENTS

- Boom
 - 2 section telescoping boom
 - Boom base section
 - Second boom section



MAJOR COMPONENTS

- Fork Carriage
- Hydraulically controlled
- Manual Fork tine adjustment



MAJOR COMPONENTS

- Operator's Cab
- Rollover Protective Structure (ROPS)
- Falling Object Protective Structure (FOPS)



MAJOR COMPONENTS

- Pintle Hooks – 8,000 lbs. cap.
 - Detachable
 - Located on left rear fender
 - Attaches to fork carriage
 - Used to maneuver equipment
 - Permanent
 - Mounted on counter weight
 - Used for towing



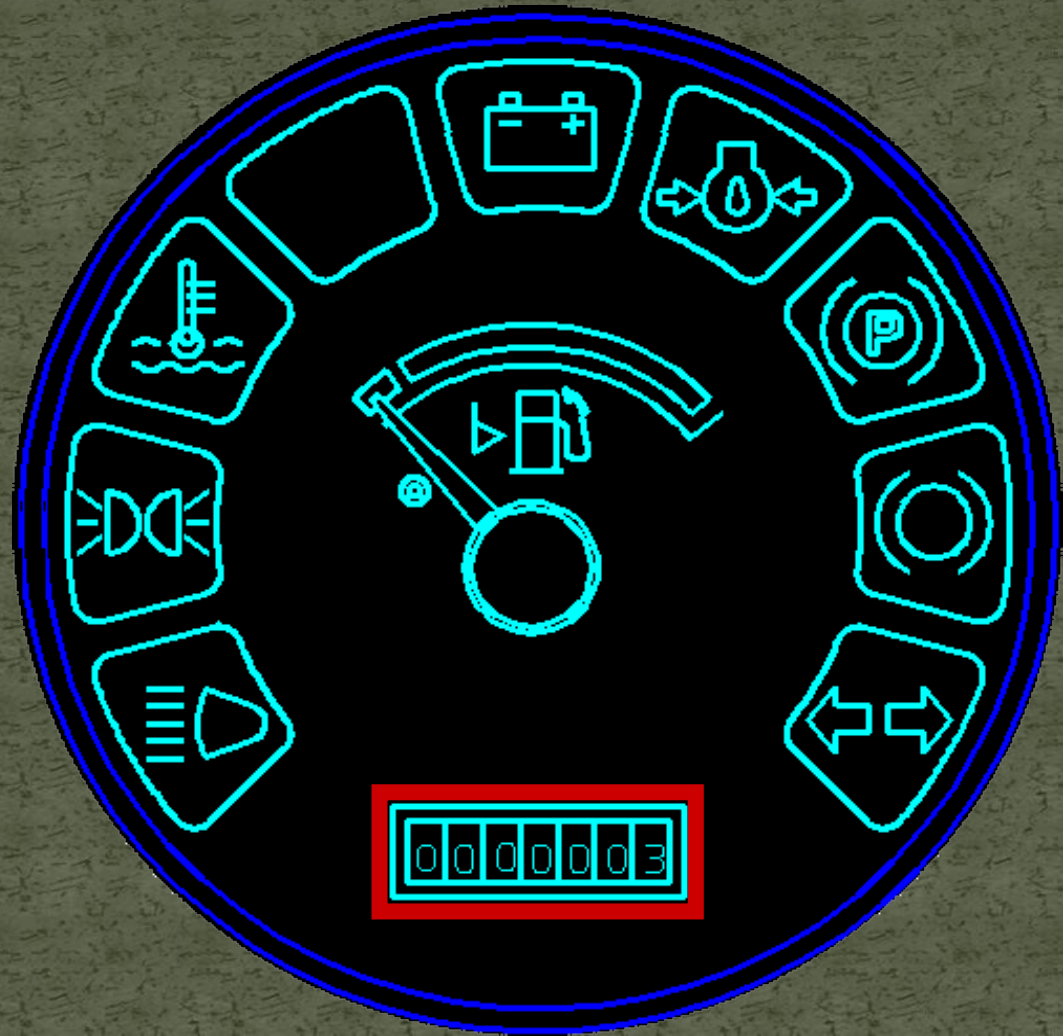
QUESTIONS

???



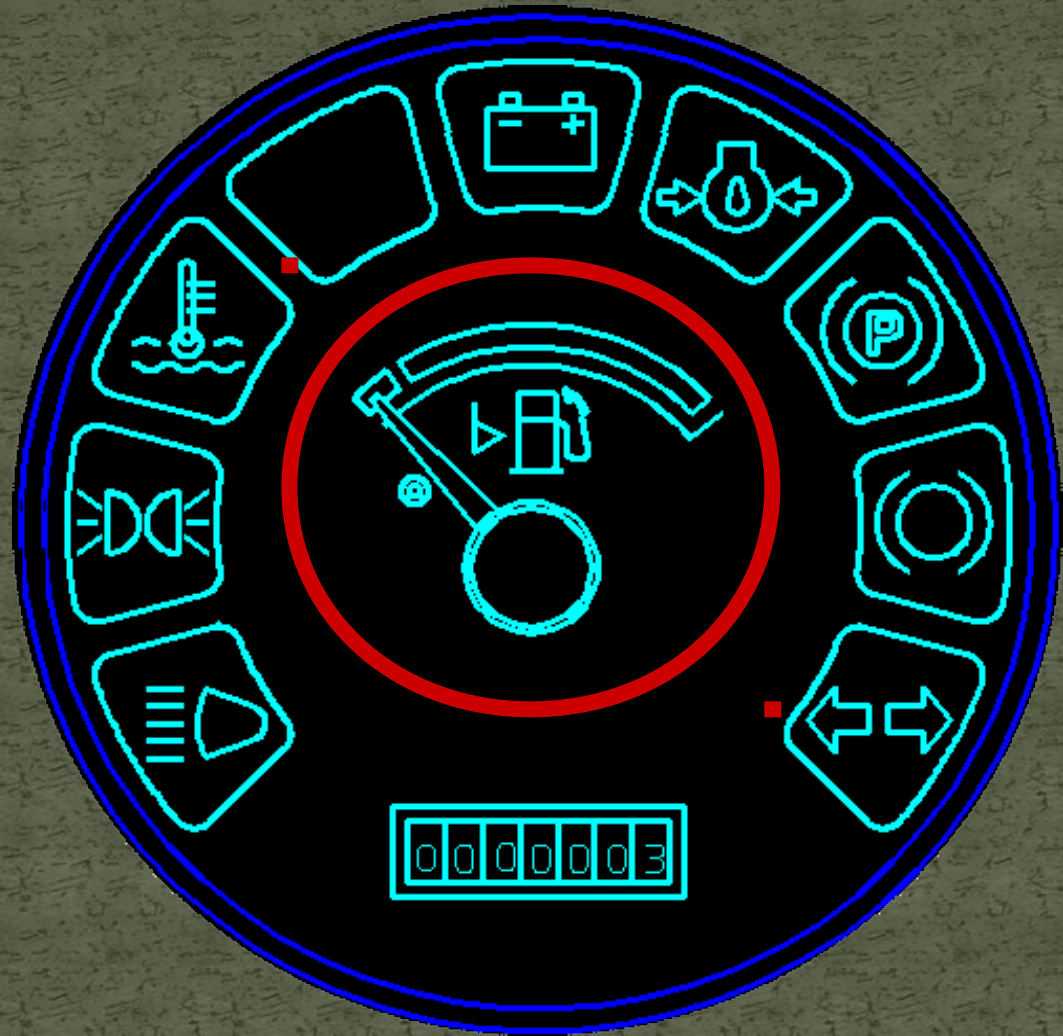
INSTRUMENTS

- Gauge Cluster
- Hour Meter



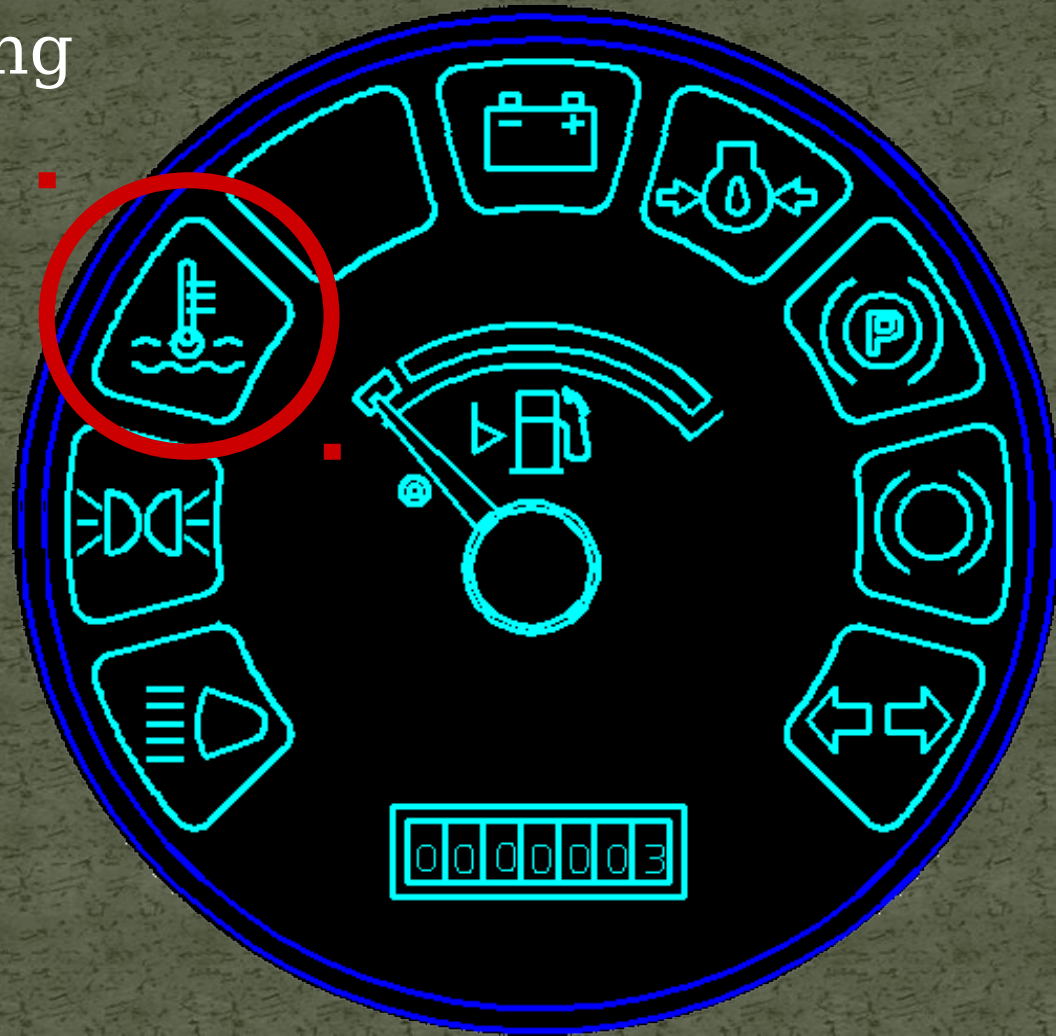
INSTRUMENTS

- Gauge Cluster
- Fuel Gauge



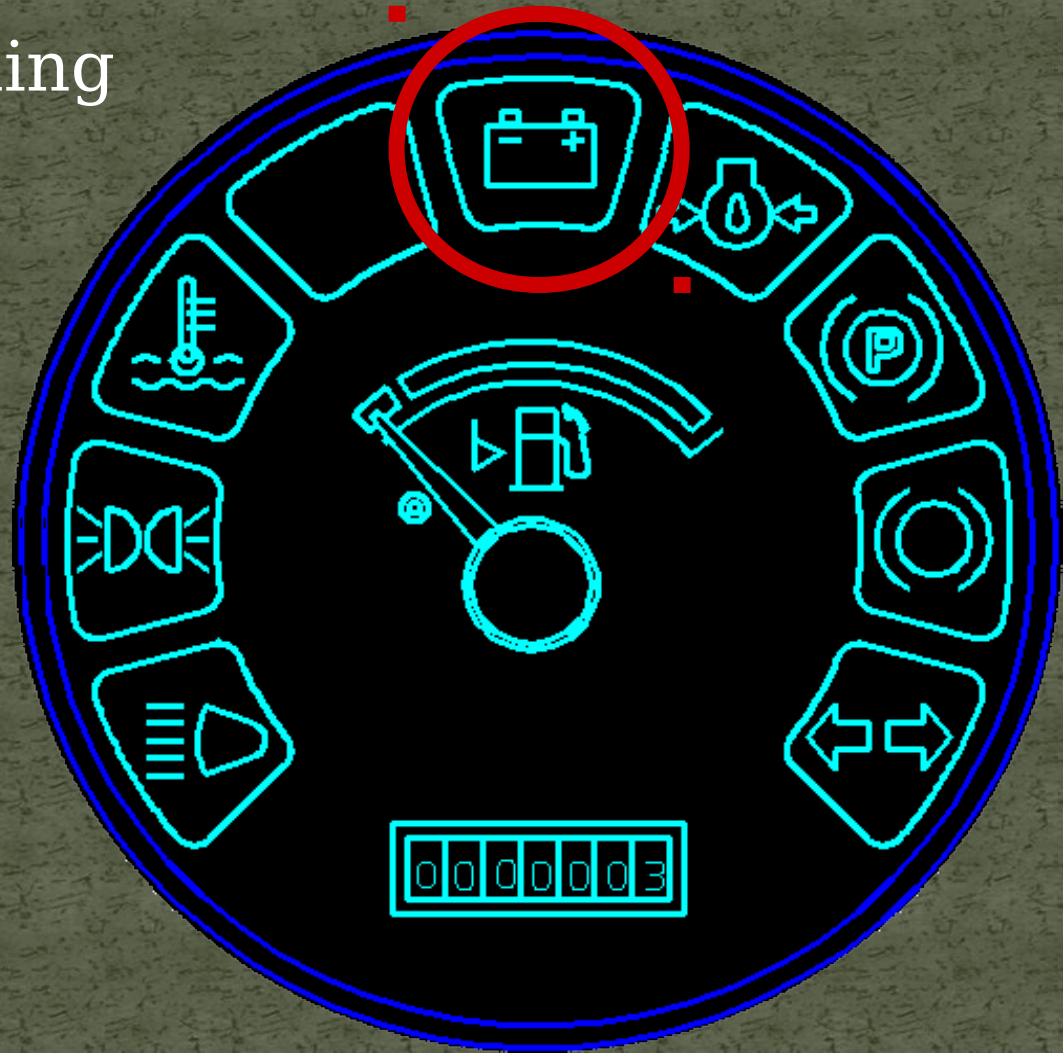
INSTRUMENTS

- Gauge Cluster
- High Temp Warning



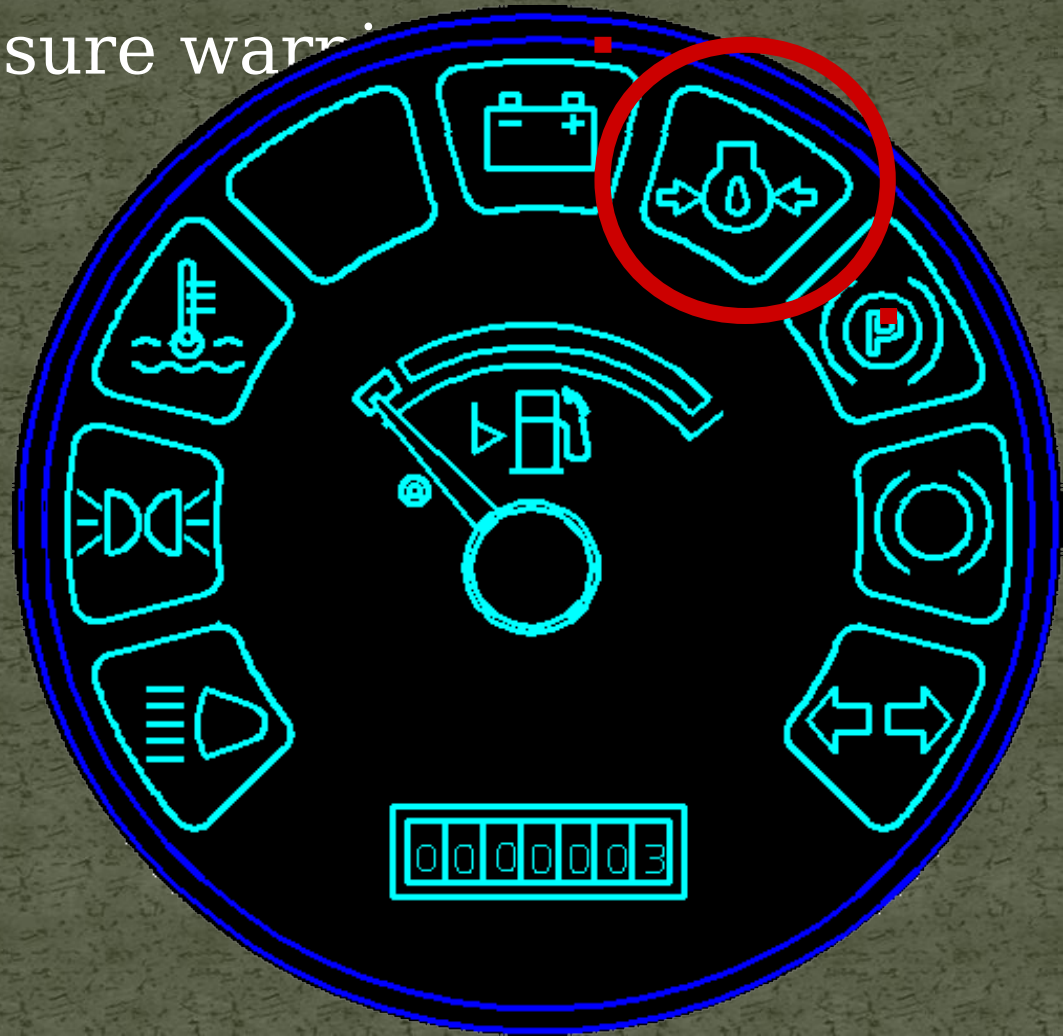
INSTRUMENTS

- Gauge Cluster
- Low Charge Warning



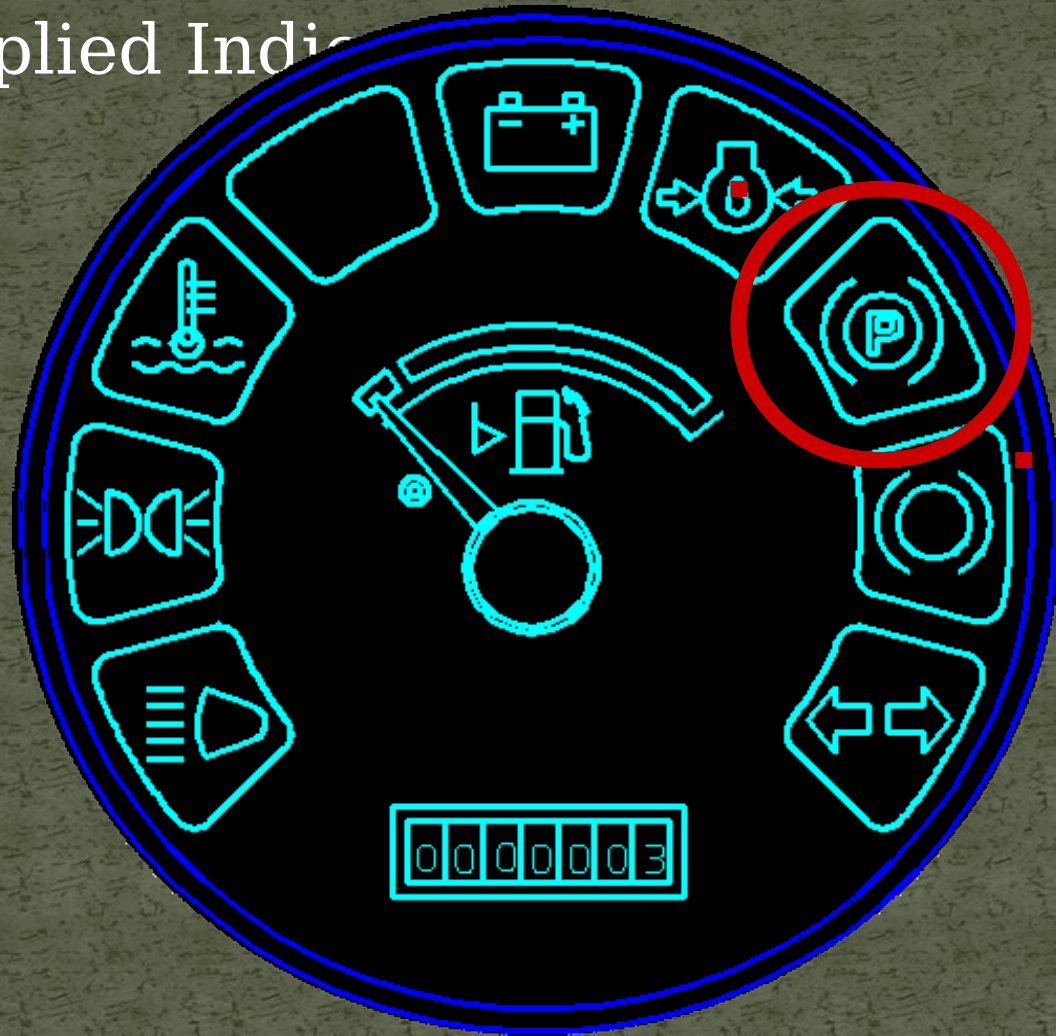
INSTRUMENTS

- Gauge Cluster
- Low Eng. Oil Pressure warning



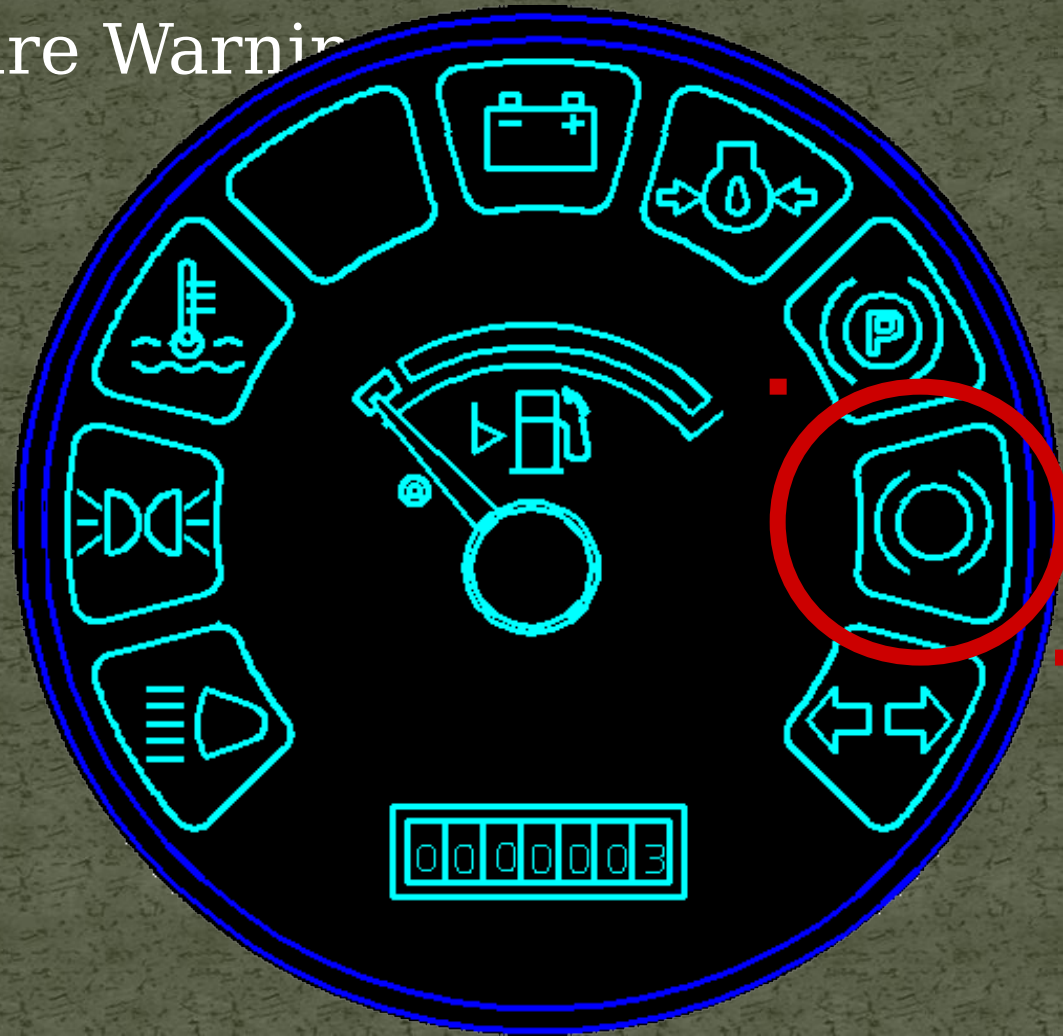
INSTRUMENTS

- Gauge Cluster
- Parking Brake Applied Indicator



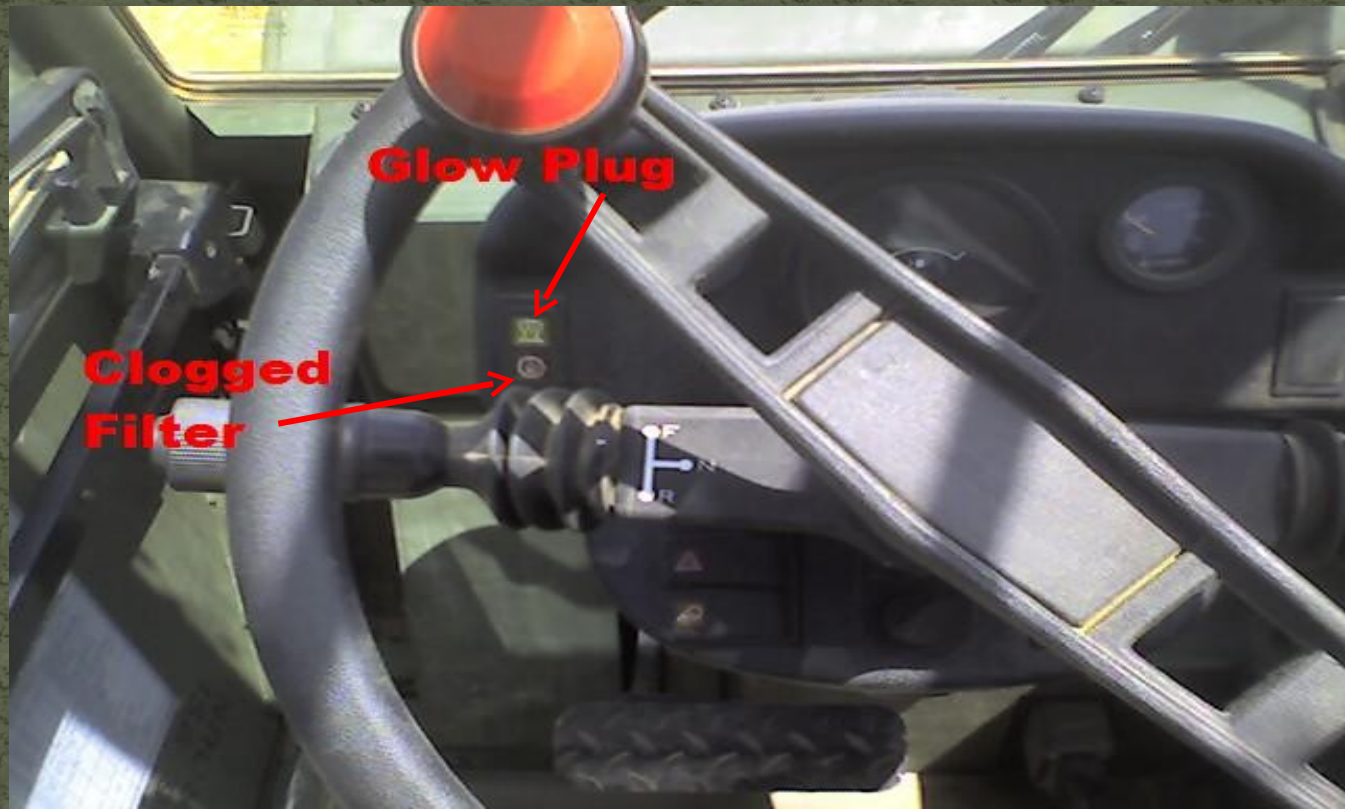
INSTRUMENTS

- Gauge Cluster
- Low Brake Pressure Warning



INSTRUMENTS

- Air Filter Condition Indicator
 - Orange light - restricted
- Glow Plug Warning Lamp
 - activated



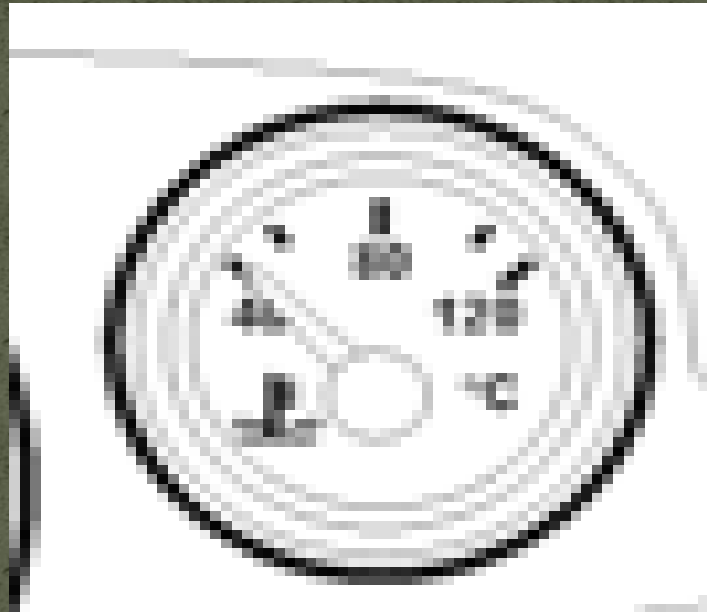
INSTRUMENTS

- Hydraulic Temperature Indicator Gauge
- Temp. of hyd. fluid in reservoir



INSTRUMENTS

- Engine Coolant Temperature Gauge
- Oil temp with in oil cooling system



INSTRUMENTS

- Filter Indicator
 - Hydraulic drive system oil filter
 - Green – normal, 0-18 psi
 - Yellow – caution, 18-22 psi
 - Red – shut down immediately, 22-60 psi



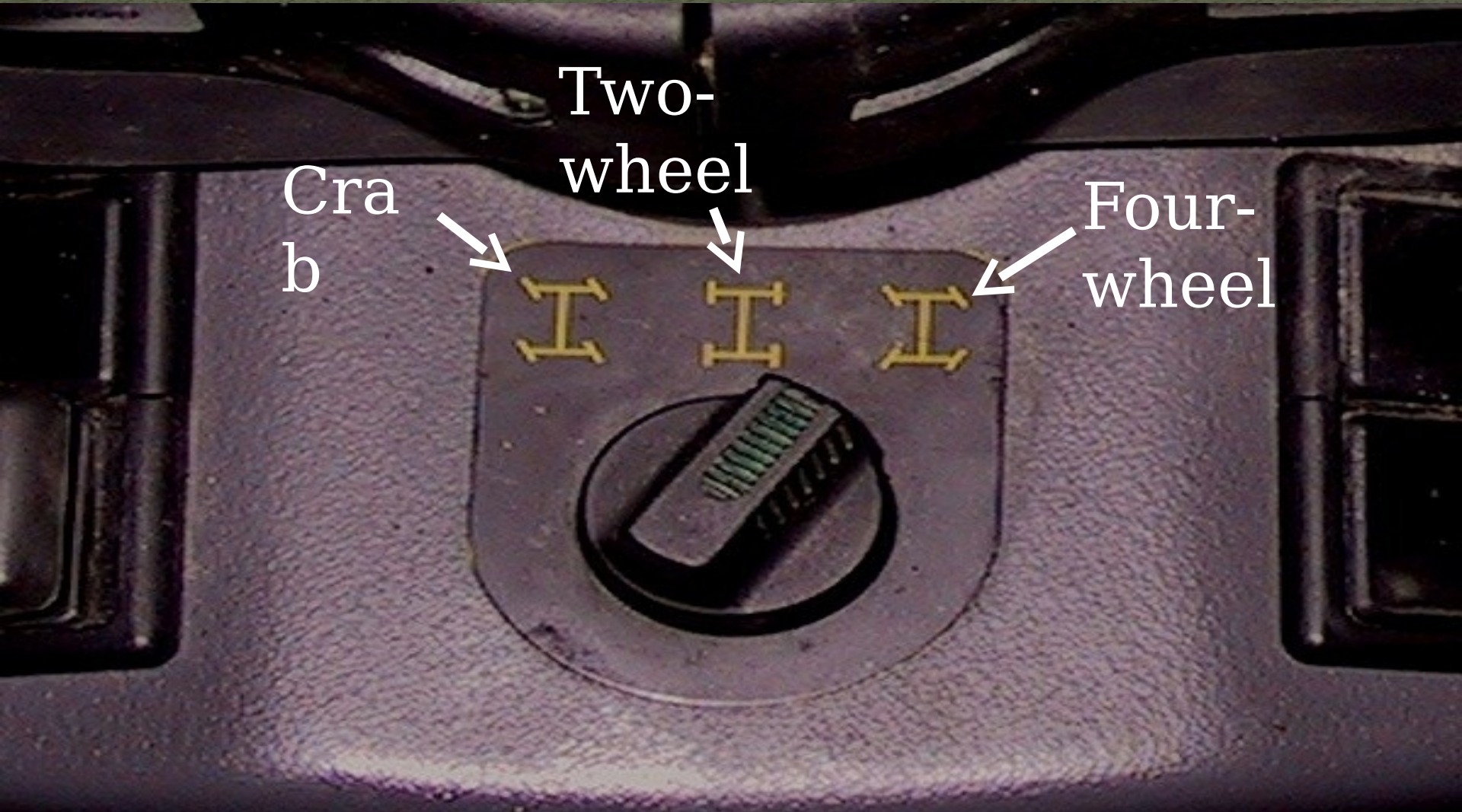
CONTROLS

- Ignition Switch
 - Off
 - Power On
 - Start



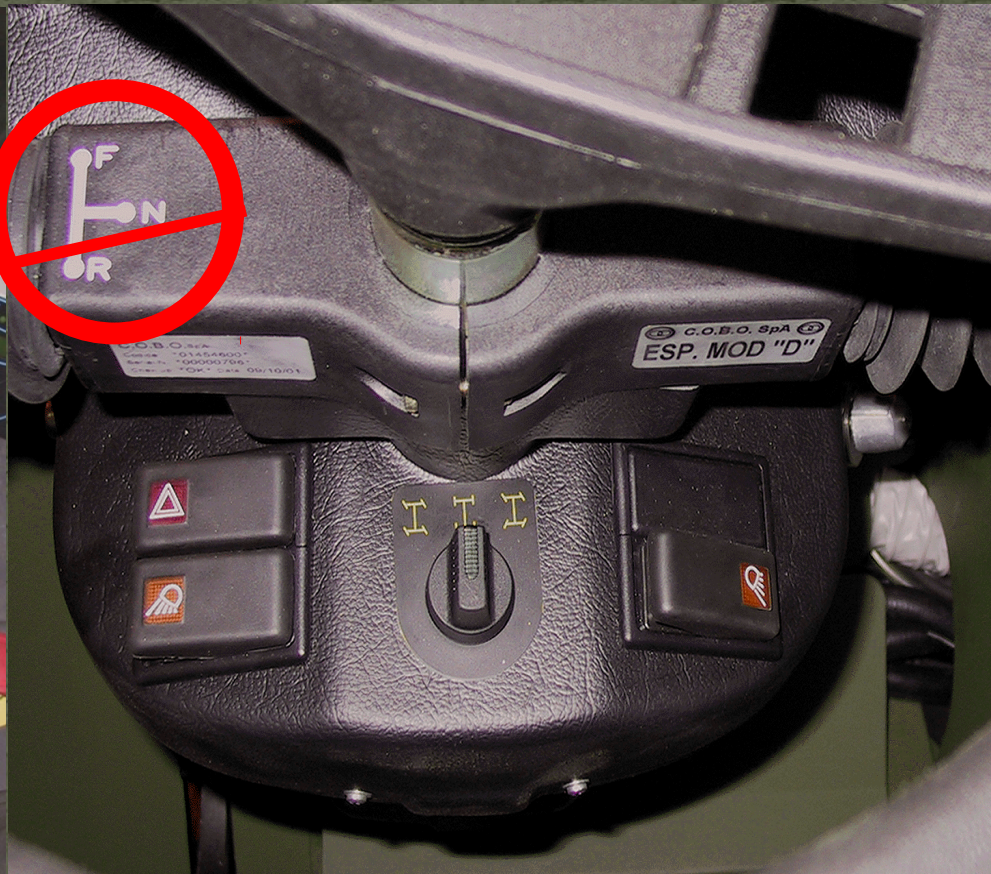
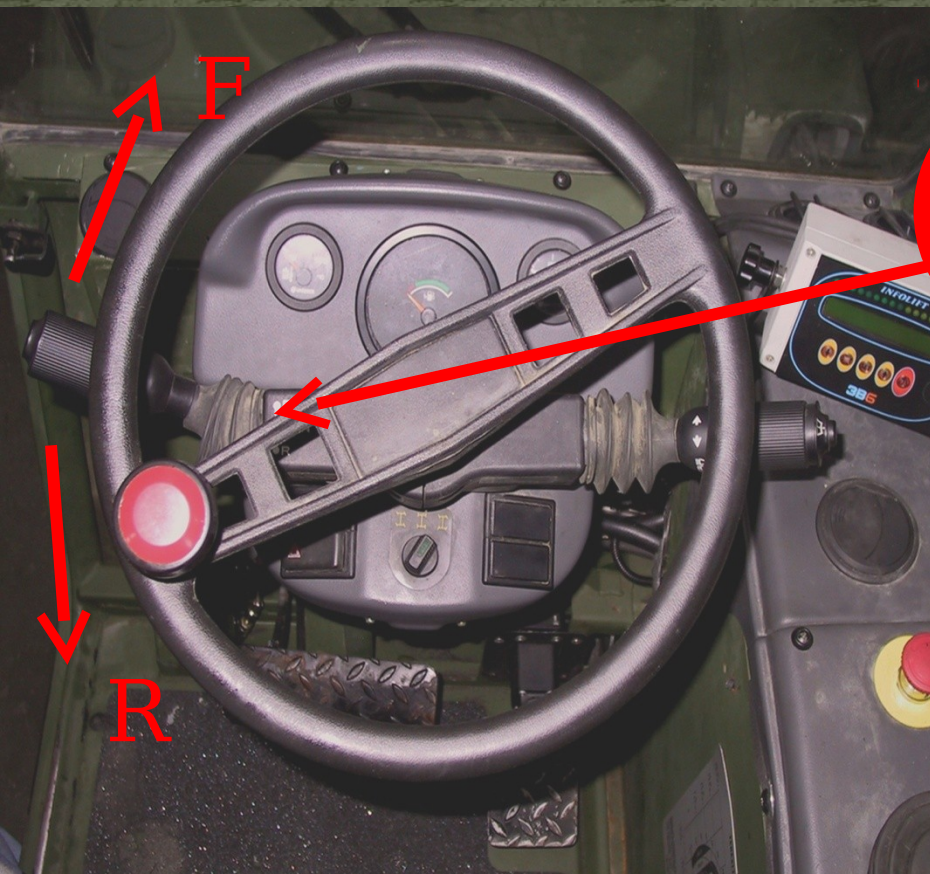
CONTROLS

- Steering Selection Switch



CONTROLS

- Forward, Neutral, Reverse Control
 - FNR
 - 3 position



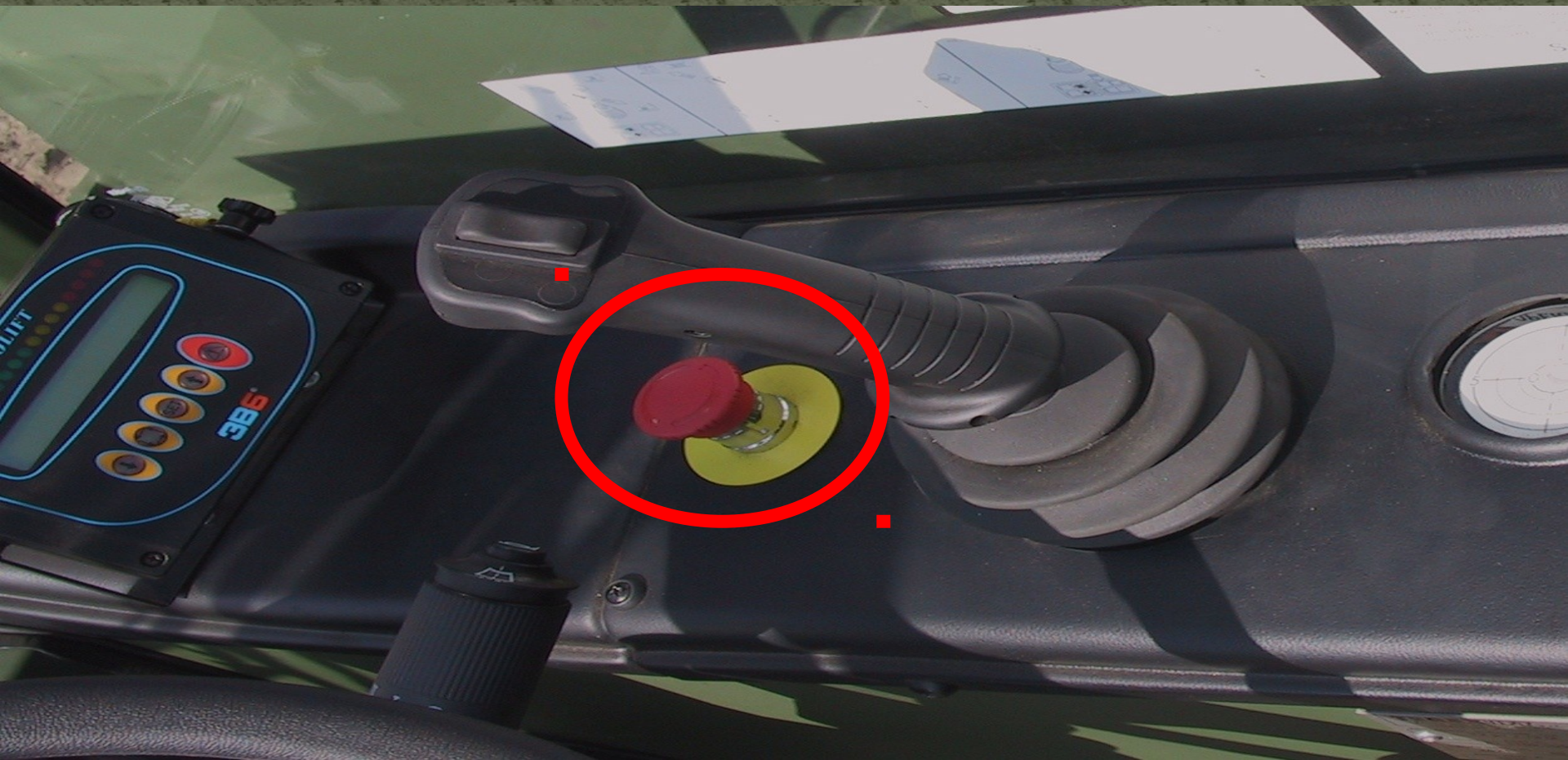
CONTROLS

- Load Moment Indicator
 - Stability & Safety
 - Green, 0-89%
 - Amber, 90-100%
 - Red, over 100%
 - Override button



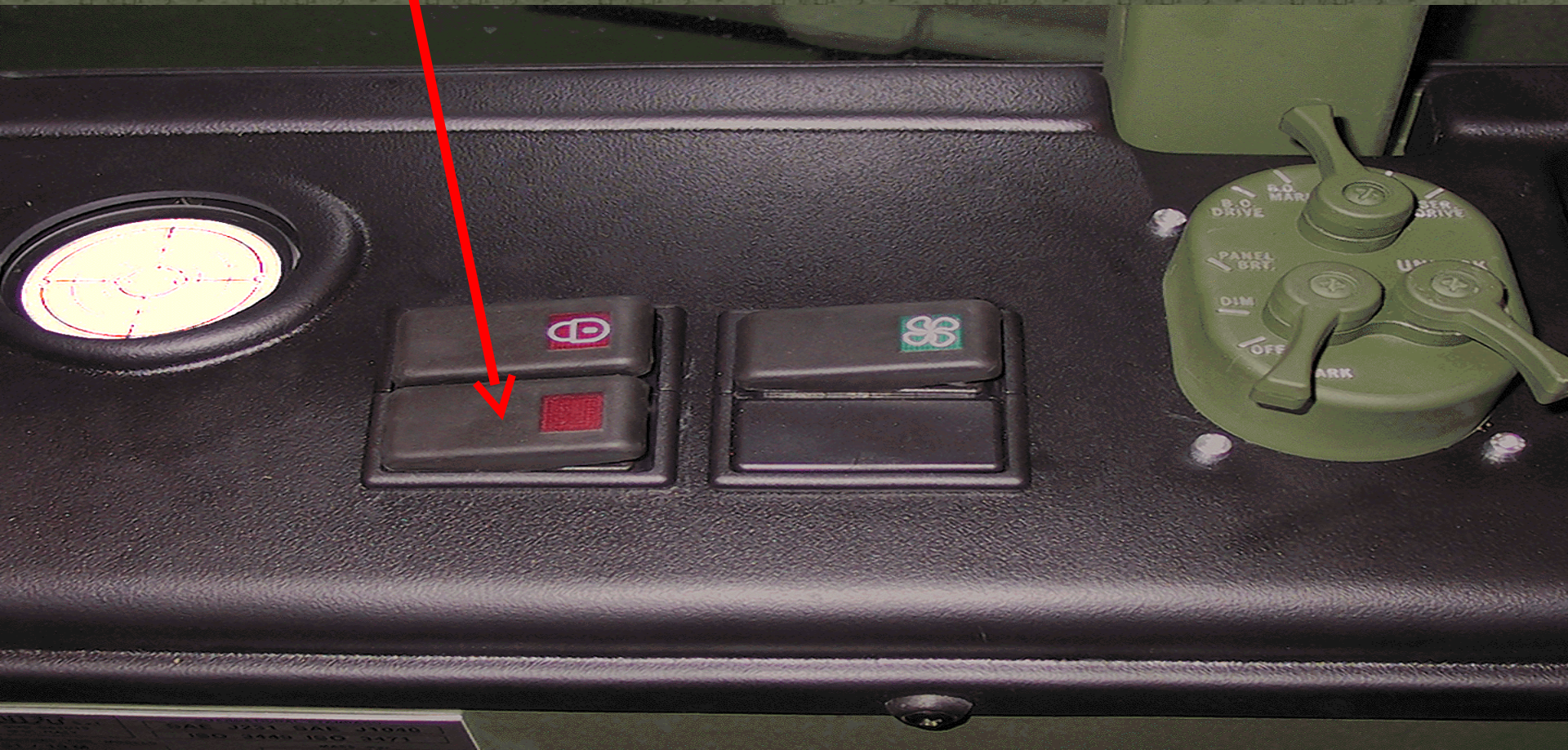
CONTROLS

- Emergency Stop Button
 - Shut down
 - Rotate Clockwise for reset



CONTROLS

- Side Shift/Rotate Function Switch
 - Forward position – fork side shift
 - Rear position – fork rotate



CONTROLS

- Work/Travel Switch
 - Forward Position – work
 - Rear Position - travel



CONTROLS

- NATO Light Switch
- Mechanical Lockout Lever
- Lighting Control Lever
 - Off
 - Stop Light
 - Service Drive
 - B.O. Marker
 - B.O. Drive



CONTROLS

- NATO Light Switch
- Panel Light Control
 - Off
 - Park
 - Dim
 - Panel Bright



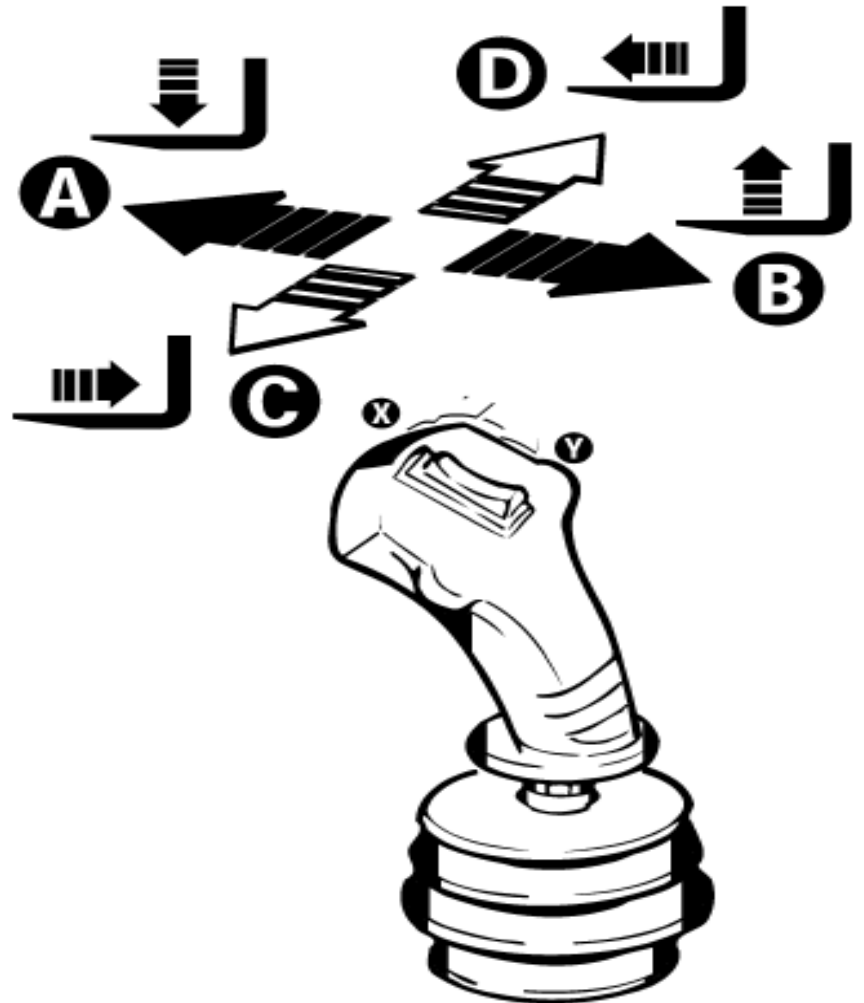
CONTROLS

- Parking Brake Lever
- Left of operator's seat
- Engaged to start engine
- Seat Switch



CONTROLS

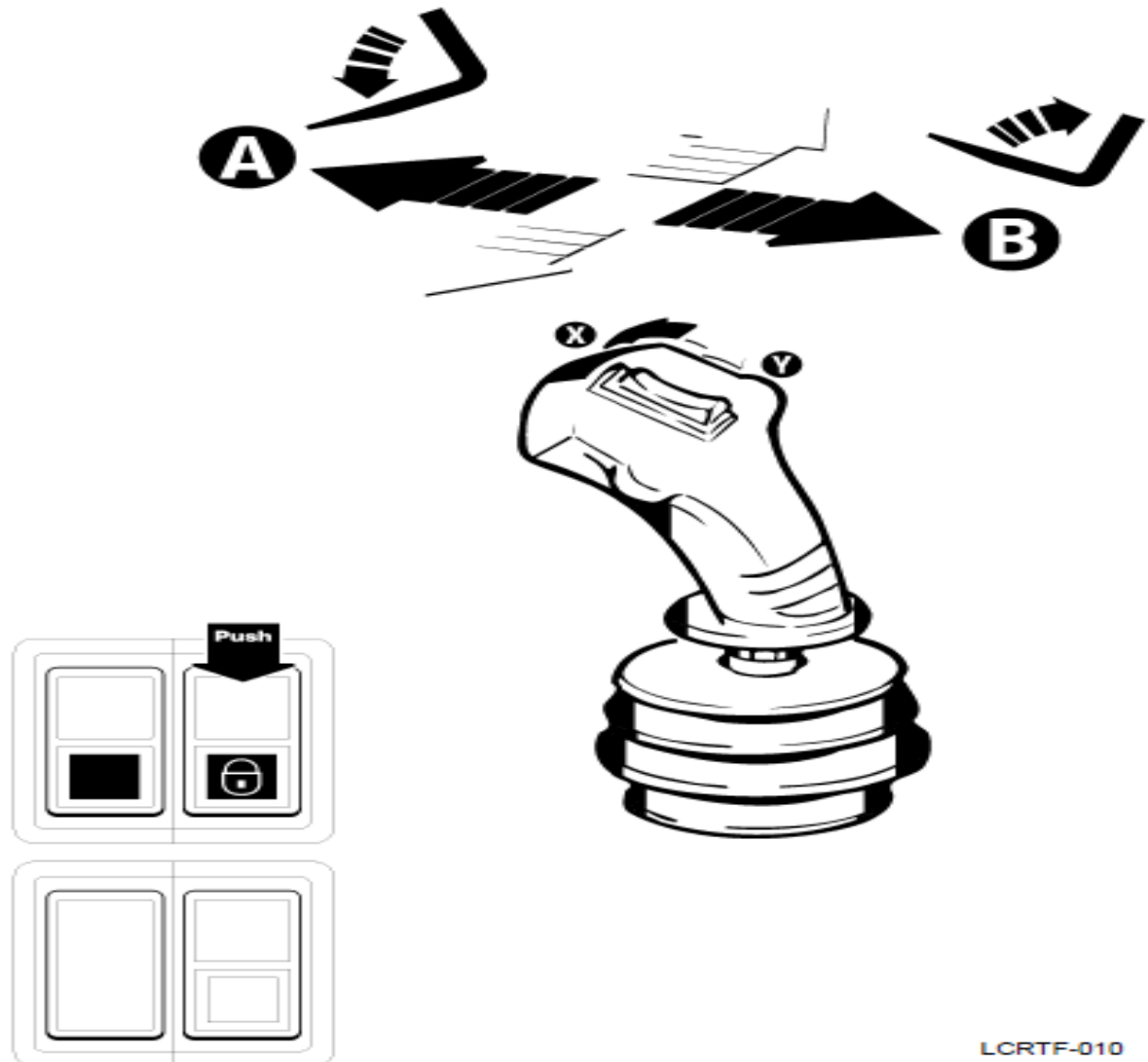
- Joystick Control Lever
- Boom Control
 - Boom Hoist
 - Boom Reach



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CONTROLS

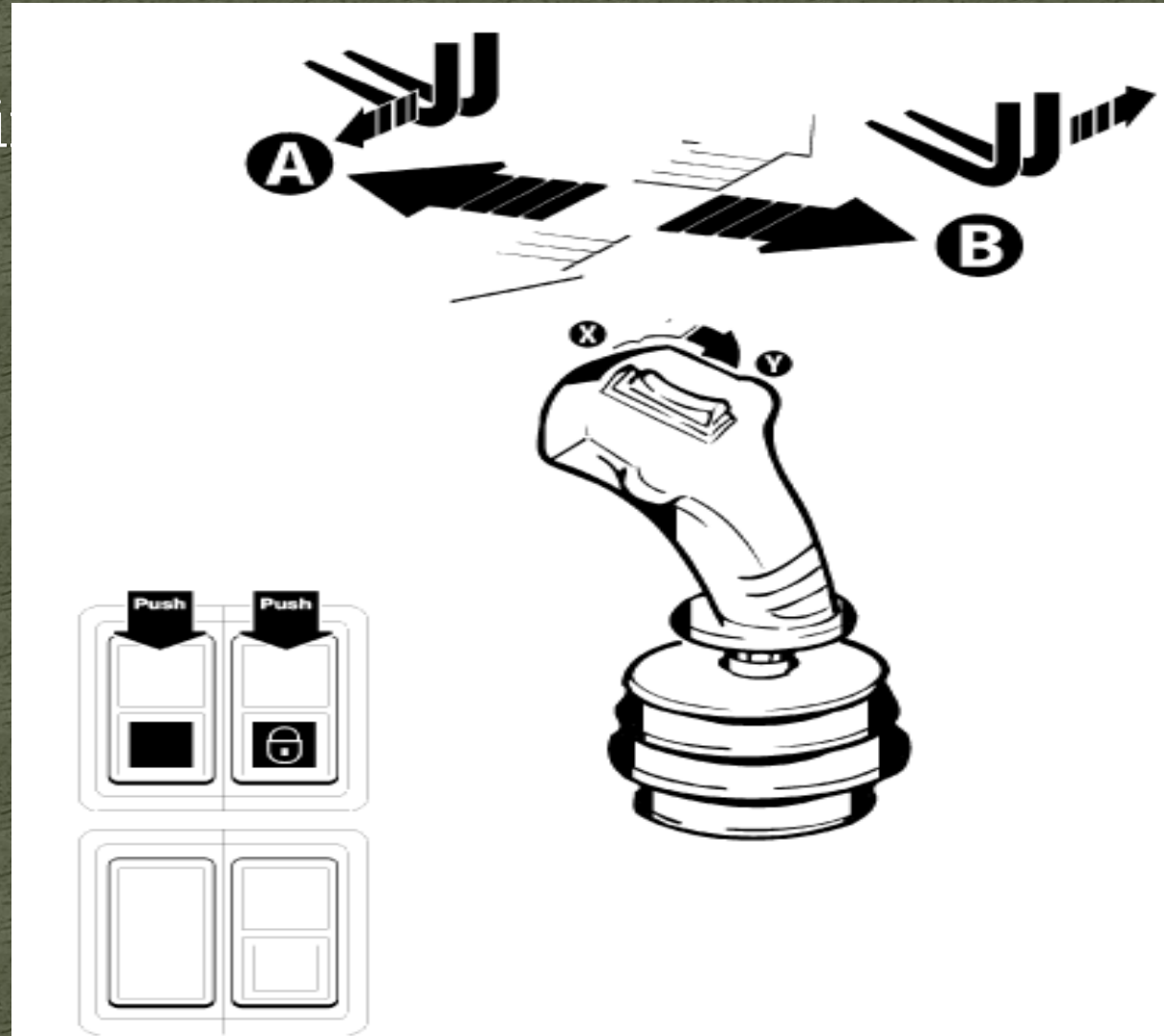
- Joystick Control Lever
- Fork Tilt



CONTROLS

- Joystick Control Lever

- Fork Side Shift



CONTROLS

- Joystick Control Lever
- Fork Oscillation (Rotation)



QUESTIONS



BASIC OPERATIONS

- Pre – Operation Checks

- Fluid Leaks
- All windows clean
- All lights clean
- Tires and wheels
- Guards in place
- Operators manual
- Rating Chart in cab
- Boom Slide pads
- Engine air cleaner
- Engine Oil level
- Hydraulic Oil level
- Brake Oil
- Engine Coolant level
- Verify controls and function working properly



BASIC OPERATIONS

- Starting Procedures
 - Battery Disconnect
 - FNR control in neutral
 - Ignition Switch to ON position
 - 20 seconds – wait 2 mins

BASIC OPERATIONS

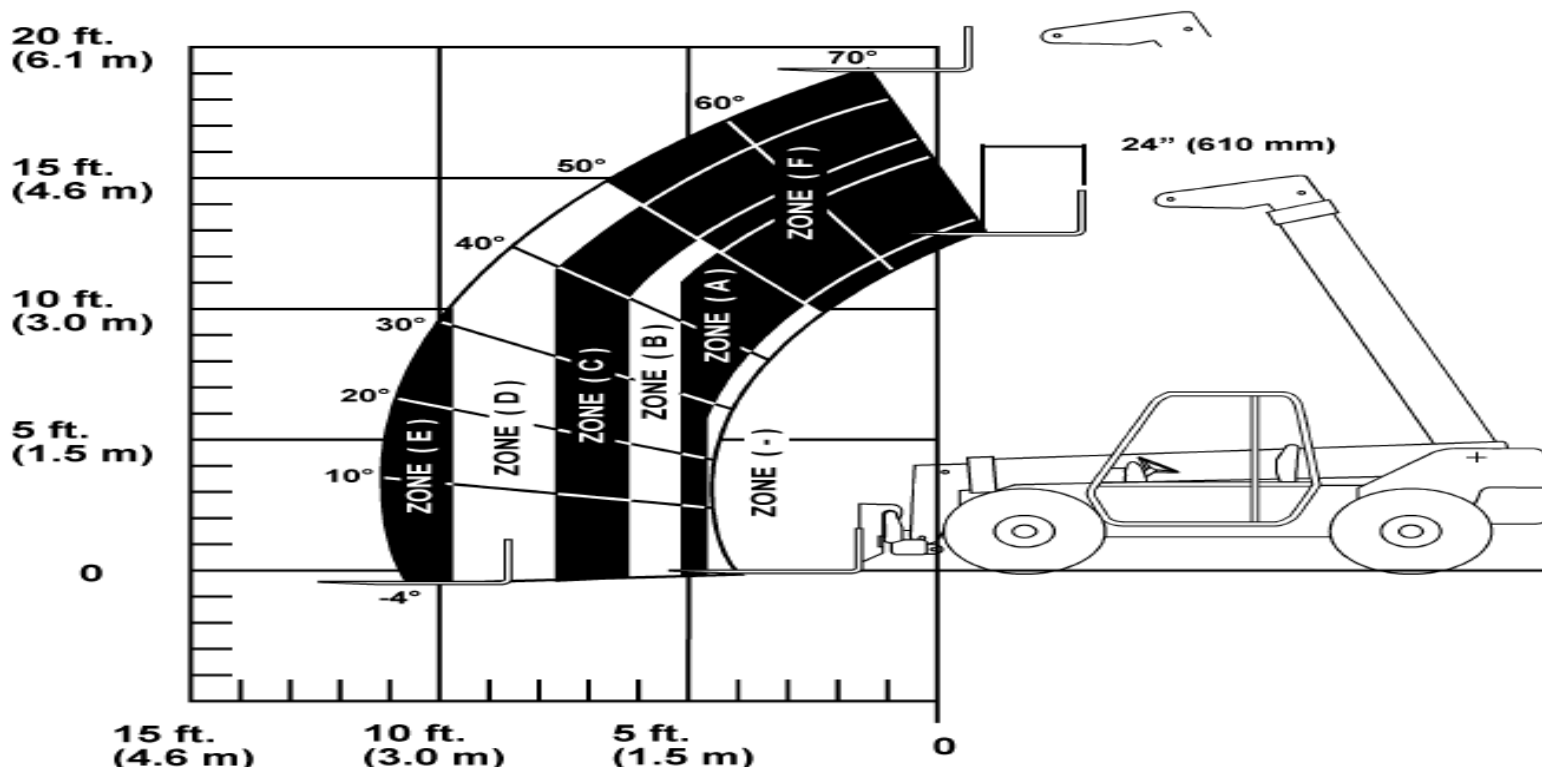
- Stopping Procedures
 - Idle engine, apply brake
 - Always apply parking brake
 - Level and lower fork carriage
 - Ignition switch OFF position
 - Battery disconnect to OFF position

BASIC OPERATIONS

- Load Chart
 - Damaged, Missing, or Unreadable – Safety Deadlined
 - Used to determine safe boom angle and boom length
 - Boom Angle – horizontal position
 - Boom Length – distance from hinge pin to end boom section

BASIC OPERATIONS

TEREXLIFT TX51-19M/MD



RATED LIFT CAPACITIES ARE WITH:
MACHINE ON A FIRM LEVEL SURFACE WITH UNDAMAGED,
PROPERLY INFLATED TIRES.

TIRE SIZE: 375 / 75 R20

TIRE PRESSURE: 54 psi

TIRE PRESSURE - SOFT GROUND: 26 psi

S/N

LOAD LIMITS / HORIZONTAL BOOM LAST FULLY VISIBLE LETTER

(-)	RETRACTED	= 5070 LBS	(2300 Kg)
(A)	LETTER VISIBLE	= 4410 LBS	(2000 Kg)
(B)	LETTER VISIBLE	= 3305 LBS	(1500 Kg)
(C)	LETTER VISIBLE	= 2755 LBS	(1250 Kg)
(D)	LETTER VISIBLE	= 2205 LBS	(1000 Kg)
(E)	LETTER VISIBLE	= 1765 LBS	(800 Kg)
(F)	BOOM ANGLE +50°	= 500 LBS	(225 Kg)

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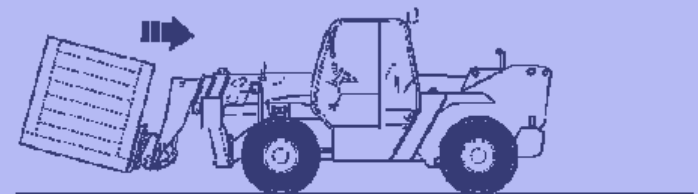
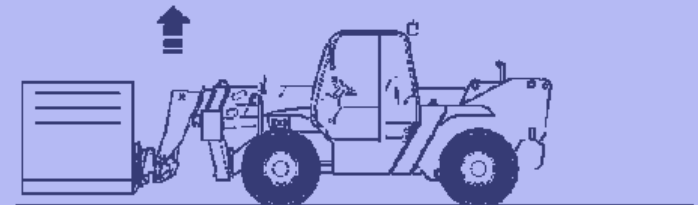
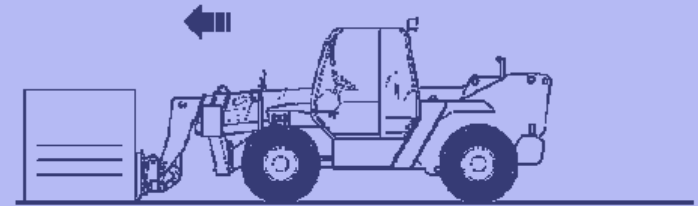
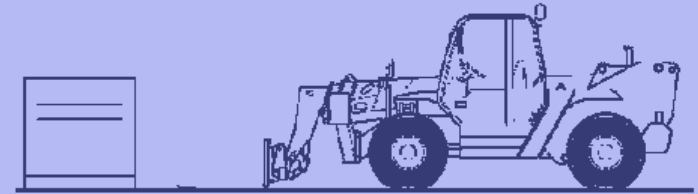
BASIC OPERATIONS

- Adjusting Forks
 - Lift clamping lever
 - Slide forks in or out
 - Lower clamping lever to lock in position



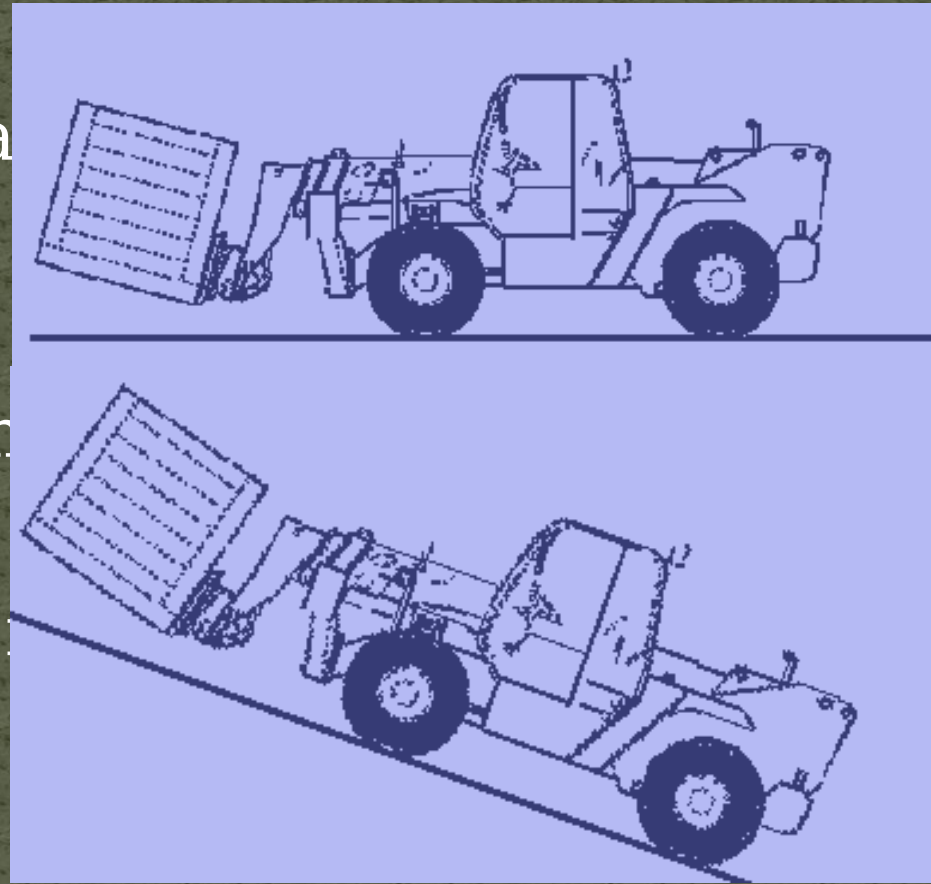
BASIC OPERATIONS

- Hoisting Loads
 - Work/Travel switch to work
 - Forks level and even
 - Raise load
 - Tilt back Slightly
 - Retract boom before travel



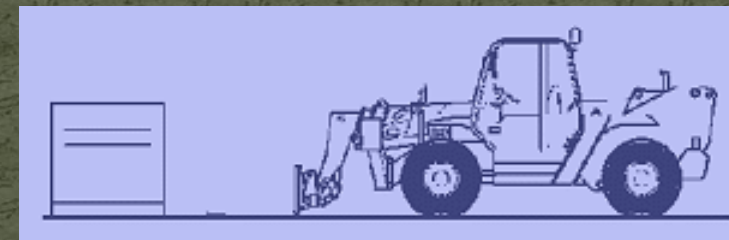
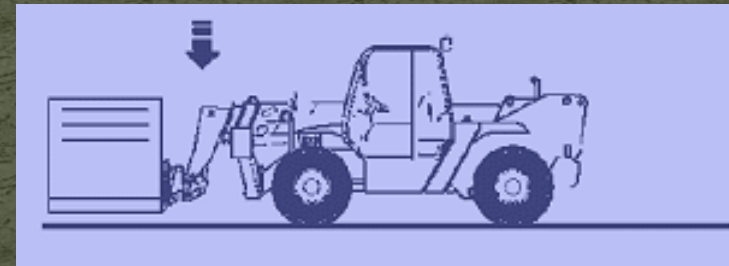
BASIC OPERATIONS

- Transferring Loads
 - Keep speed appropriate to terrain
 - 12-18" carrying height
 - Long distances place in travel mode
- Travel straight forward up hill, do not traverse, travel in reverse down hill loaded



BASIC OPERATIONS

- Placing Loads
 - Approach slow, square, and leaving room to maneuver
- Level load
- Use side shift and oscillation to adjust placement
- Lower load and clear forks
- Slowly back away



QUESTIONS



- DEMO-Before, during and after checks
- PRAC AP-Before, during and after checks
- DEMO- Hand and arm signals
- PRAC AP- Hand and arm signals
- DEMO- attach the removable pintle hook
- PRAC AP- attach the removable pintle hook
- DEMO- Operate
- PRAC AP- Operate
- DEMO- PMCS
- PRAC AP- PMCS

QUESTIONS



SUMMARY

- Safety and Operator Responsibilities
- Characteristics and Major Components
- Instruments and Controls
- Basic Operations



USMC

Providing the enemies of America an opportunity
to die for their countries since 1775